

TUBERCULAR PERITONITIS IN WOMAN.¹

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THIS comparatively rare disease is brought to the attention of the Congress since it offers an interesting field of observation, of profit for the prevention of tuberculosis, and each of the later years is adding cumulative evidence of cure by surgical intervention in a large percentage of the cases operated upon.

Inasmuch as the tubercular infection of the peritoneum has its invasion chiefly through the reproductive organs, it adds one more reason why the pelvic structures of woman should be maintained, as far as possible, in normal condition. A lacerated cervix, a chronic endometritis, a diseased Fallopian tube may make an easy admission for bacillary infection. Therefore restoration to normal conditions often serves the first purpose of preventive supervision.

The disease having been established, and diagnosis determined upon, the weight of evidence is strongly in favor of operative intervention, although the rationale is little understood. Excellent results have followed simple exploration even in advanced cases.

In 1885, I operated upon a young woman of twenty-seven years, unmarried, with a history of some months of suffering, anæmia, loss of flesh, slight abdominal distention from fluid, pelvic pain, preceded by irregular and painful menstruation.

The diagnosis of enlargement of the Fallopian tubes with fixation of the uterus and pelvic tenderness was easily made. Laparotomy was performed for the purpose of removing the appendages.

We were surprised to find a miliary tuberculosis thickly studding the abdominal peritoneum, the omentum and intes-

¹ Read before the American Antituberculosis League, April 18, 1905.

tines. Very considerable masses partially filled the pelvis. We sponged out the fluid and closed the abdominal cavity without drainage, giving a most unfavorable prognosis.

The convalescence was easy and rapid, and at the end of about four weeks she left the hospital in every way better than upon admission. The conditions at that time, from the surgical stand-point, were altogether new, and we watched her history with exceptional interest. She continued slowly and steadily to improve, and when last heard from, two years later, she wrote me, when on a visit to Europe, that she was in fair health, although there was not a complete restoration to her former vigor. Bacteriological examination confirmed the correctness of the diagnosis.

Somewhat later, in another woman, I opened the abdomen for the purpose of removing a large uterine myoma, and was equally surprised to find a widely disseminated miliary tuberculosis, so extensive that I abandoned the further operative interference, contenting myself with a careful sponging of the peritoneum with a strong solution of the bichloride of mercury. Here, also, the recovery was easy and rapid, and the patient has continued in fair general health with a marked lessening of the tumor. When last heard from, somewhat recently, her physician reported to me that she was in active discharge of her ordinary household duties.

The experiences of the years have added a very considerable number of somewhat similar cases. I find that little by little I have instituted a much more active intervention without being able to give an exact reason.

I sponge the peritoneal cavity very carefully for the removal of all fluids, and apply by sponging with care a solution of bichloride of mercury, 1-1000, to the entire peritoneum.

I use very freely afterwards normal salt solution, again drying the cavity carefully, blowing iodoform to disseminate it lightly but thoroughly over all the organs, and close without drainage.

I have occasionally varied the technique by filling the peritoneal cavity with hot normal salt solution and leaving it.

Thus far I have not had a single fatal result from operation. One patient died in about six months, evidently from a return of the disease. Perhaps two years is a minimum period in which to consider the cure complete, although the time limit must necessarily be a purely relative one.

A brief history of the last case within this limit is interesting.

Miss T., aged thirty-eight years. Always well except painful menstruation. Sudden invasion of abdominal pain occurred January 15, which was very severe. This was followed about a week later by a bloated feeling, and upon admission to hospital, February 22, 1903, the abdomen was distended more than twice its normal size. Diagnosis of probable tubercular peritonitis had been made.

Laparotomy performed; several pints of bloody serum removed. There was a thick exudate, partly filling the pelvic cavity, producing fixation of the reproductive organs. Minute tubercular nodules were widely disseminated upon the abdominal walls, omentum, and intestines.

The extent of the disease caused the making of an unfavorable prognosis. Convalescence, however, was uneventful and rapid, and at this date she appears to be thoroughly well.

It is generally accepted that the *Bacillus tuberculosis* enters the abdominal cavity, in woman, much more commonly through the Fallopian tube. This would not be expected when the tube is in a normal condition, as the ciliated epithelium deflects the passage of its contents towards the uterus.

For the same reason, the *Bacillus tuberculosis* rarely invades the pulmonary structures until the ciliated epithelium which line the bronchi are impaired in function or destroyed.

In the more recent period, peritoneal infections afford a subject for study of intense interest. It is invaded by the surgeon with a temerity hitherto undreamed of, and its maintenance in an aseptic condition is one of the most noteworthy victories of modern science. The peritoneal cavity may be considered as one enormous lymph sac.

When an infection occurs, one of nature's battles royal takes place. The abdomen provides an ideal culture chamber, heat point, albuminoids for food in abundance, conditions most favorable for development. It is interesting to note the extraordinary differences dependent upon the character of the implanted enemy. I have known a streptococcal infection prove fatal in sixty hours from its first invasion. In one instance, a supposed healthy woman felt something give away upon stepping into a high car. Death supervened in only a little over two days. The autopsy showed pints of flocculent fluid in the abdominal cavity. The infection arose from a cyst of the pelvis scarcely larger than a walnut; there was oozing from a small opening a dark, thick fluid. Cultures were made from both, demonstrating the identity of the infection.

The gonococcal infection of the Fallopian tube is a not seldom cause of a fatal peritonitis.

It is a matter of general knowledge that the *Bacillus tuberculosis* reproduces, in comparison with other forms of infection, exceedingly slowly.

This is why the "great white plague" has not swept the earth of the last inhabitant, and the knowledge of this slow reproduction gives most hopeful prospect for its prevention and cure.

If the rapidly multiplying hosts do not give opportunity for the obstruction of the lymph channels by nature's flying cohorts of leucocytes, the battle is soon over. In the slowly multiplying organisms of tuberculosis the picture is entirely different. The lymph channels are obstructed; the segregated colonies which have invaded them are surrounded by white cells imprisoned, and are often destroyed by their phagocytic action.

The fluid, usually a concomitant factor in advanced peritoneal tuberculosis, is in large measure a transudation from the capillary net-work of vessels, and in its escape lifts the endothelial cells lining the peritoneum. These cells, with leucocytes, float in the blood serum, and give to the fluid its flocculent character.

This albuminous fluid furnishes abundant bacterial food, and at the same time most seriously interferes with normal phagocytic action. In the removal of this fluid we find one important reason why surgical intervention is of value. Here the omentum, with its vast net-work of vessels, is a most important ally. Because of the anatomical construction, the power of absorption varies greatly in different parts of the peritoneal cavity.

In the diaphragmatic region, the lymph tracts and stomata are large; in the intestinal region of less size. In the pelvic region absorption takes place much more slowly.

It is rich in capillary lymphatics, but has few large lymph vessels. These small vessels are easily blocked by leucocytes, and a bacterial invasion is thereby more easily limited.

Such facts are of the first importance in aiding us in inferential deductions as to the benefit derived from operative interference. First, the removal of the fluid; second, the stimulating effect of exposure of the peritoneal surfaces to the air, the mechanic irritation of sponging, the chemic effect of medicamenta, *e.g.*, mercuric solutions, iodoform, etc. All such measures greatly increase the leucocytes, upon which it is very probable the destruction of the bacteria and the resultant cure depends.

Arangeli (Thesis Breslau) advanced the theory that the serous exudation following operation possesses powerful immunizing qualities of curative value arising from dead bacteria. He claimed to show advantageous results from the injection of ascitic and pleural effusions. The inference was easily drawn from the advantageous use of antidiatheritic and other serums.

Ebstein (*Boston Medical and Surgical Journal*, December 13, 1900) collected the histories of 227 cases of tubercular peritonitis where operation was performed. His conclusions are that the simple opening of the peritoneum is the one factor of value. He reports 15 cases from the Breslau Clinic of apparent cure.

Bottomly (*American Medicine*, January 31, 1903), of Boston, reports and analyzes 28 cases operated on. He concludes that cures may reasonably be expected in 30 per cent. to 40 per cent. of all cases.

A. E. Halstead writes very carefully upon tubercular peritonitis, dividing it, from a clinical stand-point, into two heads, cases in which ascites is predominant and those in which tumor formation is the marked feature.

Diagnosis usually difficult. History of antecedent disease important. The patient should not be considered cured until five years have lapsed after operation.

He states over 1500 cases treated by laparotomy have been recorded. In the ascitic form of the disease, the operative treatment can be conservatively stated as giving 40 per cent. to 50 per cent. of definite cures.

The surgeon has by his intervention made a most valuable contribution towards the prevention, limitation, and cure of one phase of the most wide-spread and deadliest enemy of mankind.



Dr. Wyeth's case of fracture at the base of the first phalanx of the ring-finger.